

Kaufman - Trading Systems & Methods - Chap09

Chap09

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Charting

Nowhere can a picture be more valuable than in price forecasting. Elaborate theories and complex formulas may ultimately be successful, but the loss of perspective is rarely corrected without a simple chart. We should remember the investor who, anxious after a long technical presentation by a research analyst, could only blurt out, "But is it going up or down?" Even the most sophisticated market strategies must capture the obvious trends or countertrends. Before any trading method is used, the past buy and sell signals should be plotted on a chart. Those signals should appear at logical points; otherwise, the basis of the strategy or the testing method should be questioned.

Through the mid-1980s technical analysis was considered chart interpretation. In the equities industry that perception is still strong. Most traders begin as chartists, and many return to it or use it along with their other methods. William L. Jiler, a great trader and founder of Commodity Research Bureau, wrote:

One of the most significant and intriguing concepts derived from intensive chart studies by this writer is that of characterization, or habit. Generally speaking, charts of the same commodity tend to have similar pattern sequences which may be different from those of another commodity. In other words, charts of one particular commodity may appear to have an identity or a character peculiar to that commodity. For example, cotton charts display many round tops and bottoms, and even a series of these constructions, which are seldom observed in soybeans and wheat. The examination of soybean charts over the years reveals that triangles are especially favored. Head and shoulders formations abound throughout the wheat charts. All commodities seem to favor certain behavior patterns.'

In addition to Jiler's observation, the cattle market is recognized as also having the unusual occurrence of "V" bottoms. Both the silver and pork belly markets have tendencies to look very similar, with long periods of sideways movement and shortlived, violent price shocks, where prices leap rather than trend to a new level. The financial markets have equally unique personalities. The S&P traditionally makes new highs, then immediately falls back; it has fast, shortlived drops and slower, steady gains. Currencies show intermediate trends bounded by noticeable major stopping levels, while longterm interest rates have longterm direction.

Charting remains a most popular and practical form for evaluating commodity price movement, and numerous works have been written on methods of interpretation. This chapter will summarize some of the accepted approaches to charting, and then consider advanced concepts of both standard charting methods and systems designed to take advantage of behavioral patterns found in charts. Some conclusions will be drawn as to what is most likely to work and why.

'William L. Jiler, How Charts Are Used in Commodity, Price Forecasting (Commodity Research

FINDING CONSISTENT PATTERNS

A price chart is often considered a representation of human behavior. The goal of any chart analyst is to find consistent, reliable, and logical patterns that predict price movement. In the classic approaches to charting, there are consolidation forms, trend channels, top and bottom formations, and a multitude of other patterns that can only be created by the repeated action of large groups of people in similar circumstances or with similar objectives. As of this date, quantitative studies relating the psychology of behavior to the reliability of chart formations have not been reliable. Traditional trading techniques found in the most popular stocks and commodities literature may themselves be the cause of the repeated patterns. Novice speculators approach the problem with great enthusiasm and often some rigidity in an effort to stick to the rules. They will sell double and triple tops, buy breakouts, and generally do everything to propagate the standard formations. In that sense, it is wise to know the most popular and well-read techniques and act accordingly.

Speculators have many habits which, taken as a whole, can be used to interpret charts and help trading. The typical screen trader (not on the exchange floor) will place an order at an even number, from 50 to \$1.00 per bushel in the grains, 10 to 50 points in other products. This pattern far outweighs the number of orders entering the market to buy at odd numbers, for example the S&P at 863.50 rather than 863.35 or bonds at 105 16 32 instead of 105 19/32. The public is also known to enter into the bull markets always at the wrong time. When the major media, such as television news, syndicated newspapers, and radio, carry stories of outrageous prices in cattle, sugar, or coffee, the public enters in what WD. Gann calls the grand rush, causing the final runaway move before the collapse; this behavior is easily identifiable on a chart. Gann also talks of lost motion, the effect of momentum that carries prices slightly past its goal. A common notion of the professional trader who is close to the market is that a large move may carry 10% over its objective. A downward swing in the U.S. dollar/Japanese yen from 1.2000 to a support level of 1.1000 could overshoot the bottom by .0100 without being considered significant.

The behavioral aspects of prices appear rational. In the great bull markets, the repeated price patterns and variations from chance movement are indications of the effects of mass psychology. The greatest single source of information on this topic is Mackay's *Extraordinary Popular Delusions and the Madness of Crowds*, originally published in 1841.' In the preface to the edition of 1852 the author says:

We find that whole communities suddenly fix their minds on one object, and go mad in its pursuit; that millions of people become simultaneously impressed with one delusion....

In 1975, sugar was being rationed in supermarkets at the highest

price ever known. The public was so concerned that there would not be enough at any price that they would buy (and hoard) as much as possible. This extreme case of public demand coincided with the peak prices, and shortly afterward the public found itself with an abundant supply of high-priced sugar in a rapidly declining market. The world stock markets are often the target of acts of mass psychology. Many have taken their turn reaching incredible heights, only to drop suddenly at a time when buyers are most confident, to start the long climb up again. It should not be difficult to understand why contrary thinking has developed.

Charting is a broad topic taken to great detail; the chart paper itself and its scaling are sources of controversy. A standard bar chart (or line chart) representing highs and lows can be plotted for daily, weekly, or monthly intervals to smooth out the price movement over time. The use of large increments representing price levels will reduce the volatile appearance

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ance of price fluctuations. Bar charts have been drawn on logarithmic and exponential scales,' where the significance of greater volatility at higher price levels is put into proportion with the quieter movement in the low ranges by using percentage changes. Each variation gives the chartist a unique representation of price action. The shape of the box and its ratio of height/width will alter subsequent interpretations based on angles. Standard techniques applied to bar graphs, point-and-figure charts, and other representations use support and resistance trendlines, frequently measured at 45-degree angles (and at various other angles in more complex theories). Selection of the charting paper may have a major effect on the results. This chapter will use daily price charts and square boxes unless otherwise noted.

It may be a concern to today's chartist that the principles and rules that govern chart interpretations were based on the early stock market, using averages instead of individual contracts. This will be discussed in the next section. For now, refer to Edwards and Magee, who said that the similarity of an organized exchange trading, "anything whose market value is determined solely by the free interplay of supply and demand," will form the same graphic representation. They continued to say that the aims and psychology of speculators in either a stock or commodity environment would be essentially the same; the effect of postwar government regulations have caused a more orderly market in which these same charting techniques can be used.'

INTERPRETING THE BAR CHART

The bar chart, also called the line chart, became known through the theories of Charles H. Dow, who expressed them in the editorials of the Wall Street Journal. Dow first formulated his ideas in 1897 when he created the stock averages for the purpose of evaluating the movements of stock groups. After Dow's death in 1902, William P. Hamilton succeeded him and continued the development of his work into the theory that is known today. Those who have used charts extensively and understand their weak and strong points might be interested in just how far our acceptance has come. In the 1920s, a New York newspaper was reported to have written:

One leading banker deplores the growing use of charts by professional stock traders and customers' men, who, he says, are causing unwarranted market declines by purely mechanical interpretation of a meaningless set of lines. It is impossible, he contends, to figure values by plotting prices actually based on supply and demand; but, he adds, if too many persons play with the same set of charts, they tend to create the very unbalanced supply and demand which upsets market trends. In his opinion, all charts should be confiscated, piled at the intersection of Broad and Wall and burned with much shouting and rejoicing.,

This same newspaper may have repeated this idea applied to program trading after the stock market plunge in October 1987. Nevertheless, charting has become part of the financial industry, whether the analyst is interested in the fundamentals of supply and demand or pure price movement. The earliest authoritative works on chart analysis are long out of print, but the essential material has been recounted in newer publications. If however, a copy should cross your path, read the original Dow Theory by Robert Rhea;⁴ most of all, read Richard W Schabacker's outstanding work Stock Market Theory and Practice, which is probably the basis for most subsequent texts on the use of the stock market for invest

⁴ R.W Schabacker, Stock Market Theory and Practice (Forbes, New York, 1930, pp. 595600).

4 Robert D. Edwards and John Magee, Technical Analysis of Stock Trends (John Magee, Springfield, MA, 1948, Chapter 16).

5 Richard D. Wyckoff, Stock Market Technique, Number One Wyckoff New York, 1933, p. 105).

6 Robert Rhea, Dow Theory (VailBallou, Binghamton, NY, 1932).

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ment or speculation. The most available book that is both comprehensive and well written is Technical Analysis of Stock Trends by Robert D. Edwards and John Magee. it is confined entirely to chart analysis with related management implications and a small section on commodities. For the reader who prefers concise information with few examples, the monograph by W.L. Jiler, Forecasting Commodity Prices with Vertical Line Charts, and a complementary piece, Volume and Open Interest, A Key to Commodity Price Forecasting, can still be found. A valuable recent addition is Jack Schwager's, Schwager on Futures: Technical Analysis (Wiley, 1996), the first of a three volume set.

The Dow Theory

in its basic form, the Dow theory is still the foundation of chart interpretation and applies equally to stocks, financial markets, commodities, and the wide variety of vehicles used to trade them. Its major premise is that averages remove a large amount of extraneous price motion; therefore, Dow's original work applied exclusively to averages and not to individual stocks. In fact, Dow's Industrial, Utility, and Transportation averages have survived the test of time. The difficulty with interpreting stock movement is in the thinness of a specific issue especially in the early part of the twentieth century; its fixed number of shares and light volume made the movement of one stock an unreliable indicator of an economic turn. Taken in total, it would be improbable to move the average by the manipulation of a single issue; hence, the averages become the subject of

analysis. Commodities, especially the financial and index markets, differ from stocks in their enormous volume, as demonstrated by the Eurodollars, which can trade exceptionally high volume with only the slightest price movement. In futures, trading can be limited to one primary contract with little distortion because of constant massive arbitrage between futures and cash, and between one bank and another, especially in the interest rate and currency markets. The possibility of one trader influencing the U.S. bond market (other than the Chairman of the Federal Reserve) for more than a few seconds is remote to the point of no concern. When working in financial markets a single product is often given the same significance as a sector in the stock market when constructing a portfolio or index, yet in the footsteps of Dow, a group of international interest rates, with similar maturities, or a U.S. dollar index, can still be a valuable substitute for a single market.

The Dow theory defines price motion, as represented by the average, in three distinct primary, secondary, and minor trends. These elements have often been compared with the tide, the wave, and the ripple. The primary trend denotes the main move that exceeds 20% of the original price; the secondary trend is an adjustment or correction, and the minor movements are daytoday fluctuations. The theory emphasizes the main move. As Angas said: "Be simple. Take the grand view." it is easier to identify the dominant trend than to worry about every change in direction.

Accumulation and distribution are the beginning phases of a bull or bear market. Accumulation is the period in which the insiders begin to acquire a long position in anticipation of a bull move. In charting, this is traditionally seen as a wide formation at a low price with increasing open interest and erratic peaks in volume representing large purchases. The distribution phase serves the same function for anticipated bear moves.

A unique part of the original Dow theory that prevents it from being applied to commodities markets is the principle of confirmation, requiring that a signal be produced by more than one average. There has been some criticism with regard to the significance of an industrial group being confirmed by a rail, but the concept seems sound. If the purpose of

Two other works worth studying are Gerald Appel, *Winning Market Systems: 83 Ways to Beat the Market* (Signalert, Great Neck, NY, 1974), and Gerald Appel and Martin E. Zweig, *New Directions in TecAmical Analysis* (Signalert, Great Neck, NY, 1976).

the Dow theory is to identify major trends in the economy, it is unlikely that the average of one stock group would be going up and the other group moving down in a welldefined inflationary or deflationary period. In the same way, one would not expect the price of corn to increase and the price of wheat to decrease in absolute terms. A period of inflation should uniformly affect stocks and commodities; any items varying from the total pattern should be explained on an individual basis.

The relationship of the number of shares or contracts traded to the development of a price move is characterized by saying that "volume expands with the trend." Whether a bull or bear market, activity increases as the trend becomes clear. In futures, the open interest has been treated in the same manner, with increased open interest, especially during the

accumulation and distribution phases, a sign of a new move forming.

The Dow theory has other points that have been incorporated into chart interpretation. The exclusive use of closing prices is important for two reasons: (1) they are most closely followed by the typical speculator, and (2) they discount the effects of any positions taken by floor traders who are daytrading. Support and resistance lines were introduced as a substitute for the secondary move, which may have been difficult to define. Lastly, the theory expressed a trading philosophy by stating that a trend should be assumed to be intact until a reversal occurred.

CHART FORMATIONS

Chart analysis applies straight lines and geometric formations extensively. They can be classified into broader groups of trendlines and channels, accumulation and distribution, and other patterns. In addition, chart formations can apply to major or minor price changes and to different time frames.

Trendlines

The trendline remains the most popular and readily recognized tool of chart analysis. It can be any of the following:

A support line is drawn to connect the bottom points of a price move.

A horizontal support line is extremely common and represents a firm price level that has withheld market penetration. It may be the most significant of all chart lines.

A resistance line is drawn across the price peaks of a sustained move, or a horizontal resistance line representing the fixed level that resists upward movement. Resistance lines are not normally as clear as support lines because they are associated with higher volatility, which causes erratic price movement.

A channel is the area between parallel support and resistance lines that serves to contain a sustained price move. When the support and resistance lines are relatively horizontal, or sideways, the channel is called a trading range.

A bullish support line would then be a rising line drawn across the lowest points of a price move, and a bearish resistance line is a declining line drawn across the highest peaks of a price move.

Formations for Accumulation and Distribution

Most of the effort in charting goes into the identification of tops and bottoms. Because many of these formations unfold over fairly long periods, they have been called accumulation at the bottom, where typical stock investors slowly buy into their position, and distribution at the top, where the invested positions are sold off. The most popular of these formations are:

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Headandshoulders bottom and top

Common rounded upward or downward turn

Triangular bottom and top of an ascending, descending, or symmetric shape, such as a triangle, flag, or pennant
Ascending bottom and top "V"bottom (a "V"top is usually referred to as a spike)

Double bottom and top

Complex bottom and top, including a triple bottom or top, or a combination of other formations

Broadening bottom and top

Most of these patterns are selfexplanatory and are covered in detail in many books devoted entirely to the topic. In addition to the classic by Edwards and Magee and the monograph by Jiler, the reader can find considerable value in John Murphy's "Bar Charting" in Kaufman, Handbook of Futures Markets,' and more recently Schwager on Futures.. Technical Analysis.' Instead of giving examples of these formations, we will look at them in the context of trading rules.

Individual Patterns

In addition to the broader patterns noted above, there are specific situations of short duration that have been noted by the chartist, including:

Gaps

Spikes

Reversal days Thrust days

Cups and caps

These will be covered in the following sections.

Major and Minor Formations

Throughout the study of charting, it is important to remember that the same patterns will appear in short as well as longterm charts. An upward trendline can be drawn across the bottom of a price move that only began last week; it can represent a sustained 3year trend in the financial markets, or a 6month move in coffee. In general, the longer the time interval, the more significant the formation. Contract highs and lows, welldefined trading ranges, trendlines using weekly charts, and headandshoulder formations are carefully watched by traders. Obscure patterns and new formations are not of interest to most chartists, and without the support of the traders, conclusions drawn from those formations have no substance. The basic charting course also includes interpretation of volume and open interest and a variety of rules for using the formations.

BASIC TRADING RULES

The simplest formations to recognize are the most commonly used and most important: horizontal support and resistance lines, bullish and bearish support and resistance lines, and channels. Proper use of these basic lines is essential for identifying the overall direc

'Arthur Sklarew, Techniques of a Professional Commodity Chart Analyst (Commodity Research Bureau, New York, 1980), and John Murphy, "Bar Charting" in Handbook of Futures Markets, Perry J. Kauffman (ed) (John Wiley & Sons, New York, 1984).

9 Jack D. Schwager, Schwager on Futures: Technical Analysis (John Wiley & Sons, New York, 1996).

tion of the market and how it gets there. An understanding of these patterns will be helpful to computeroriented analysts, many of whose techniques have been modeled after chart formation. More complex formations are likely to enhance good performance but cannot compensate for poor trend identification.

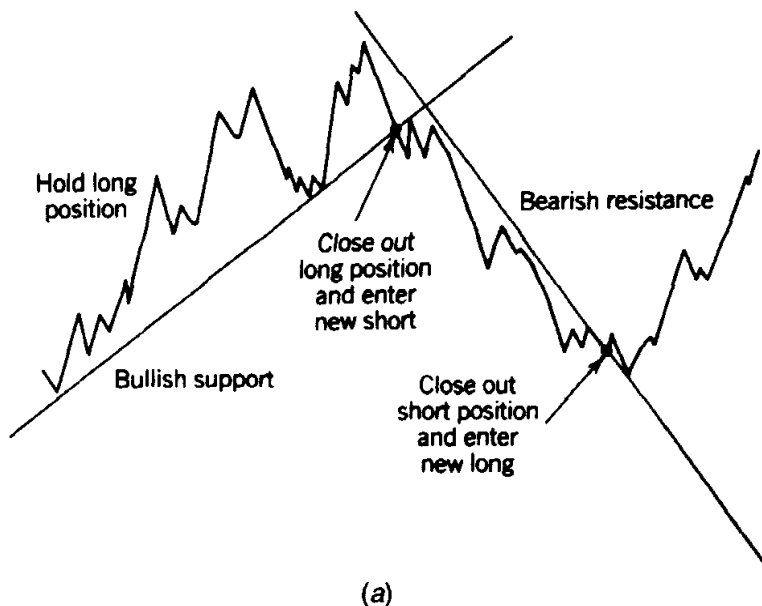
Once the support and resistance lines have been drawn, a price penetration of those lines creates the basic trend signal (Figure 91a). The

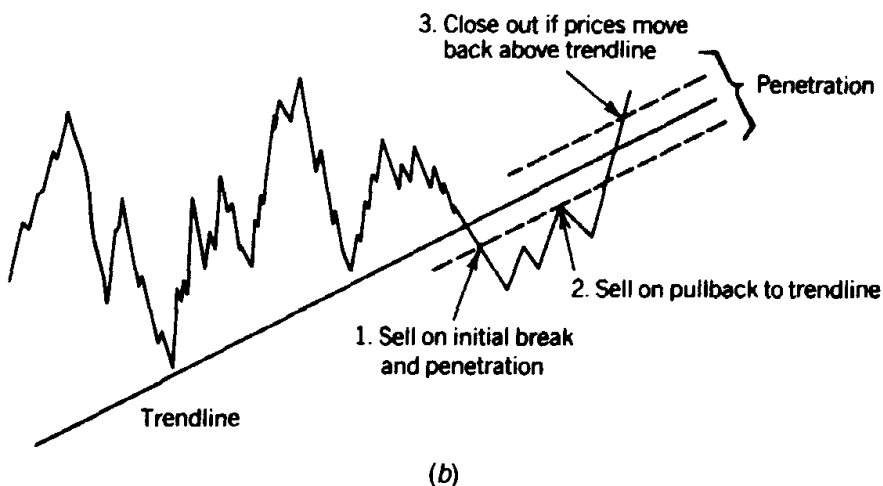
bullish support line defines the upward trend, and the bearish resistance line denotes the downward one. For longterm charts and major trends this is often sufficient, but frequent small penetrations of both long and shortterm trendlines can be avoided by placing a band around both lines (Figure 91b). A short signal occurs when both the trendline and the band have been penetrated. Because of the basic charting rule~Once broken, a resistance level becomes a support level and a support level becomes a resistance level~the original trendline (or a trendline plus and minus a band) can be used as a stoploss. If prices penetrate the stoploss point, then return to the original formation., there has been a false breakout and the original trendlines are still valid.

A Classic Dilemma

The use of bands around a trendline is more popular than the use of the trendline alone because price movement is not clean. Larger bands produce more reliable trend signals;

FIGURE91 Basic trading rules. (a) Line signals. (b) Bands.





however, they need more time to generate a signal resulting in smaller profits and larger risk. This produces a classic dilemma for the trader, one that cannot be resolved except by personal choice.

Experienced traders often wait for the first pullback after the breakout before entering their position. This technique results in a higher percentage of profitable trades. The position is set when the new direction is confirmed following a test of the old support or resistance levels (and the theoretic stoploss). If the test fails, which frequently occurs, the trade is not entered and a loss is prevented (Figure 91b). Unfortunately, most of the biggest profits result from breakouts that never pull back. Catching only one of these breakouts can compensate for all the small losses due to false signals. Many professional traders may be steady winners, but they do not often profit from the biggest moves.

Identifying Direction from Consolidation Patterns

it is said that markets move sideways about 80% of the time, which means that directional breakouts do not occur often, or that most breakouts are false and fail to identify a new market direction. Classic accumulation and distribution formations, which occur at longterm lows and highs, attempt to find evolving changes in market sentiment. Because these formations occur only at extremes, and may extend for a long time, they represent the most obvious consolidation of price movement. Even a rounded, or saucer, bottom may have a number of false starts; it may seem to rum up in a uniform pattern, then fall back and begin another slow move up. In the long run the pattern looks as if it is a somewhat irregular but extended rounded bottom; however, using this pattern to enter a trade in a timely fashion can be disappointing and has resulted in the safebut conservative technique of averaging in.

Most other consolidation formations are best viewed in the same way as a simply horizontal sideways pattern, bounded above by a

resistance line and below by a support line. If this pattern occurs at reasonably low prices, we can eventually expect a breakout upward when the fundamentals change. Occasionally prices seem to become less volatile within the sideways pattern, and chartists take this opportunity to redefine the support and resistance levels so that they are narrower. Breakouts based on these more sensitive lines tend to be less reliable because they represent a temporary quiet period inside the normal level of market noise.

Market Noise

All markets have a normal level of noise. The stock index markets have the greatest amount of irregular movement due to its extensive participation, the high level of anticipation built into the prices, and because it is an index. This is contrasted to shortterm interest rates, which have large participation but little anticipation and a strong tie to the underlying cash market. In comparison, longterm rates allow for greater movement away from the cash market. The normal level of noise can be seen as the consistent daily or weekly trading range on a chart of the DJIA or S&P. When volatility declines below the normal level of noise, the market is experiencing shortterm inactivity. An increase in volatility back to normal levels of noise should not be confused with a breakout.

This same situation can be applied to a triangular formation, which has traditionally been interpreted as a pause within a trend. This pattern often follows a fast rise and represents a short period of declining volatility. If volatility declines in a consistent fashion, it appears as a triangle; however, if the point of the triangle is smaller than the normal level of market noise, then a breakout from this point is likely to restore price movement to a range typical of noise, resulting in a flag or pennant formation. Both of these latter patterns have uniform height that can include a normal level of noise.

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TOPS AND BOTTOMS

Most of the formations important to bar charting can be traded using a penetration of one of the support or resistance lines as a signal. The most interesting and potentially profitable trades occur on breakouts from major top or bottom formations. The simplest of all bottom formations, as well as one that offers great opportunities, is the extended rectangle at contract lows. Fortunes have been made by applying patience, some available capital, and the following plan:

1. Find a market with a long consolidating base and low volatility (with futures it should also have increasing open interest). When evaluating interest rates, use the yield rather than the price, and avoid currencies that have no base price; that is, they have no level considered low, but instead have a point of equilibrium.
2. Buy whenever there is a test of its major support level, placing a stoploss to liquidate all positions on a new, low price.
3. After the initial breakout, buy again when prices pull back to the original resistance line (now a support level). Close out all positions if prices penetrate back into the consolidation area, and start again at step 2.

4. Buy whenever there is a major price adjustment in the bull move. These adjustments, or pullbacks, will become shorter and less frequent as the move develops. They will usually be proportional to current volatility or the size of the price as measured from the original breakout.

5. Liquidate all positions at a prior major resistance point, a top formation, or the breaking of a major bullish support line.

Building positions in this way can be done with a relatively small amount of capital and risk. The closer the price comes to major support, the shorter the distance from the stoploss; however, fewer positions can be placed. In his book, *The Professional Commodity Trader* (Harper & Row), Stanley Kroll discussed "The Copper Caper How We're Going to Make a Million," using a similar technique for building positions. It can be done, but it requires patience, planning, and capital. The opportunities continue to be there.

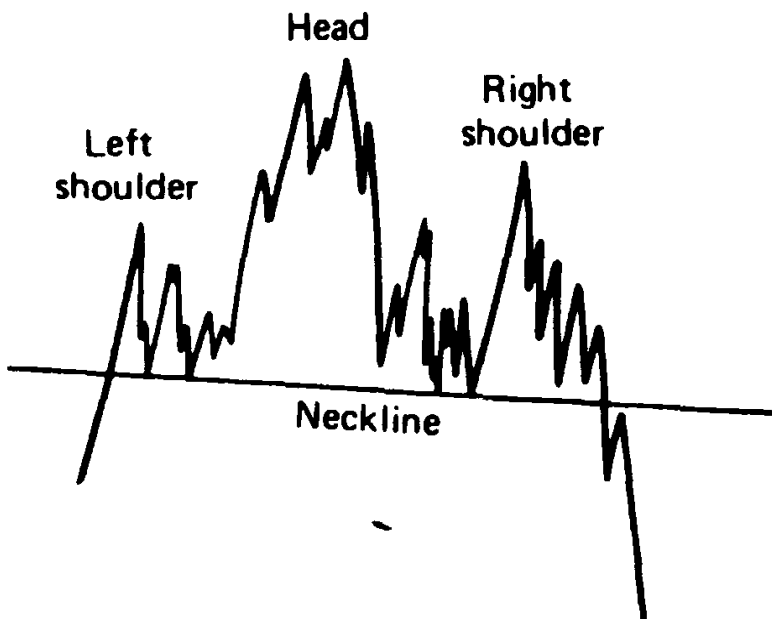
This example of patiently building a large position does not usually apply to bear markets. Although there is a great deal of money to be made on the short side of the market, prices move faster and may not permit the accumulation of a large position. There is also exceptionally high risk and the increased risk of false signals caused by greater volatility. Within consolidation areas at low levels, there is an underlying demand for a product, the cost of production, government price support (for agricultural products), and low volatility. There is also a welldefined trendline that may have been tested many times. A careful trader will not enter a large shortsale position at an anticipated top, but will join the buyers who contribute to the growing volume and open interest at a welldefined major support level.

Head and Shoulders

The classic top and bottom formation is the head and shoulders, accepted as a major reversal indicator. This pattern, wellknown to chartists, appears as a left shoulder, a head, and a right shoulder (Figure 92).

The headandshoulders top is developed in the following manner:

1. A strong upward breakout reaching new highs on increased volume. The move appears to be the continuation of a longterm bull move.
2. A consolidation area formed with diminishing volume. This can look much like a descending flag predicting an upward breakout, or a descending triangle indicating a downward breakout.



3. Another upward breakout on continued reduced volume forms the head. This is the key point of the formation. The new high is not confirmed by increased volume, and prices fall off quickly.

4. Another descending flag or triangle is formed on further reduced volume followed by a minor breakout without increased volume. This last move forms the right shoulder and is the third attempt at new highs for the move.

5. The lowest points of the two flags, pennants, or triangles become the neckline of the formation. A sale is indicated when this neckline is broken.

Trading Rules for Head and Shoulders

There are three approaches to trading a headandshoulders top formation involving increasing degrees of anticipation:

1a. Sell when the final dip of the right shoulder penetrates the neckline. This represents the completion of the headandshoulders formation. Place a stoploss just above the entry if the trade is to be held only for a fast profit, or place the stoploss above the right shoulder or above the head to liquidate on new strength, allowing a longer holding period.

b. Sell on the first rally after the neckline is broken. (Although more conservative, the lost opportunities usually outweigh the improved entry prices.) Use the same stops as in Step 1a.

2a. Sell when the right shoulder is being formed. A likely place would be when prices have retraced their way half of the distance to the head. A stoploss can be placed above the top of the head.

b. Wait until the top of the right shoulder is formed and sell with

a stop either above the high of the right shoulder or above the high of the head.

Both steps 2a and 2b allow positions to be taken well in advance of the neckline penetration with logical stoploss points. Using the high of the head for a protective stop is conservative.

3. Sell when the right part of the head is forming, with a stoploss at about the high of the move. Although this represents a small risk, it has less chance of success. It is for traders who prefer to find tops and are willing to suffer frequent small losses

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to do it. Even if the current prices become the head of the formation, there may be numerous small corrections that will look like absolute tops to an anxious seller.

Other Top and Bottom Formations

The experienced trader is most successful when prices are testing a major support or resistance level, usually a contract or seasonal high or low. The more often those levels are tested the clearer they become and the less likely prices will break through to a new level without a change in the fundamental supply and demand factors.

Repeated tests of tops are visually clearer, but not as exact as bottoms because of the added volatility of higher prices. The double top is a more speculative trade than successive multiple tops; it is more frequent than the other formations and is the first opportunity for picking the top of a bull move. It is also easy to position a stoploss above the previous highs. As with other chart patterns, declining volume would be a welcome confirmation after the formation of the first top and accompanying each additional test of the top (Figure 93).

Triple tops are frequently used as opportunities for selling. Because they are easily seen, there is anticipation that causes the third top to look similar to a right shoulder, lower than the previous highs. Traders waiting for a nearest of the highs to enter a trade with less risk could find themselves without any position at all. Among professionals, the fourth top is considered the final test; whichever direction prices turn at that time will determine the new major trend.

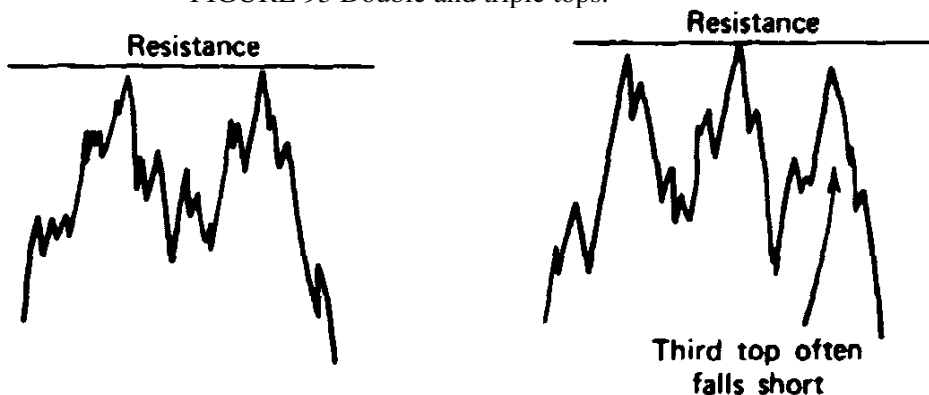
Double and triple bottoms also occur but are generally of lesser magnitude than tops. Because low prices can be sustained at value or cost of production levels, it is not necessary for the new upward trend to begin in the near future. In most markets, the profitability associated with these bottom formations is much lower and is proportional to the lower risk. With the exception of the financial markets, for which bottoms are really tops (peak interest rates), double and triple bottom formations are most often found in the currency and cattle markets.

When using top formations, we must consider why a three or four-combination is so rare. There are two possibilities. When it is evident that the previous peaks occurred under extreme conditions, such as a temporary supply shortage, or demand caused by a news-related item, the following tests of the high are met with active selling. This causes any attempt at an upward move to be sharply halted. The greater the conviction that the rally

is over, the greater the selling.

Multiple tops also fail to appear because prices simply move higher. The market does not see the previous tops as significant, and new buying renews the upward trend. If you see a single, interim top on a chart, formed by a pullback within a trend, there must have been a potential double top when prices resumed their direction. It may be that two or

FIGURE 93 Double and triple tops.



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three peaks at very similar prices are very unusual and a poor way to trade. A perfect test of the top means that there is uncertainty at that moment and significant selling developed after the fact.

Now You See It, Now You Don't!

The "V" top (actually an inverted V), or spike, is the most difficult top formation to anticipate and trade. Its frequency in the 1974 and 1980 markets tended to deceive a generation of new speculators. Vtops are caused by critical shortage and demand and magnified by public awareness. In 1974, it was a combination of domestic crop shortage, severe pressure on the U.S. dollar abroad, and foreign purchases of U.S. grain that combined to draw public attention. The news was so well publicized that novice commodity traders withdrew their funds from their declining stock portfolios and bought any commodity available as a hedge against inflation.

It could not continue for long. When the top came in soybeans, silver, and most other commodities, there was no trading for days in locked limit markets: paper profits dwindled faster than they were made, and the latecomers found their investments unrecoverable. The public often seems to enter at the wrong time. The case of cattle is an example.

Live cattle prices are based on a combination of consumer demand, substitute foods, current health news, and the price of various feed grains. During 1973 as the price of feed increased, cattle prices rose steadily from under 40c per pound to almost 54c in August. Prior to that, live beef prices had never been over 37c (in 1952). The price of soybean meal, used as a high protein feed, continued to move prices higher. How high could it go? Between August and October, live cattle prices formed a Vtop and declined back to under 40c, giving up the 8 month gain in 2 months. How could the

supply and demand factors change so quickly? They can't. Fast rises are always followed by fast, usually extensive declines.

The psychology of the runaway market is fascinating. In some way, even Vtop shares a similarity with the examples in Mackay's *Extraordinary, Popular Delusions and the Madness of Crowds*. With beef, the consumers do not tend to consider pork, fowl, or fish as an adequate substitute and will bear increased costs longer than expected. As prices neared the top, the following changes occurred:

- The cost became an increasing factor in the standard household budget.
- Rising prices received more publicity
- Movements for public beef boycotts began.
- Grain prices declined due to the new harvest.

This becomes a matter explained by the Elastic Theory, it can be applied to the 193 soybean and 1980 silver markets as well. The Elastic Theory is based on the principle that when prices get high enough, a number of phenomena occur:

1. Previously higher priced substitutes become practical (synthetics for cotton, reclaimed silver).
2. Competition becomes more feasible (corn sweetener as a sugar substitute, alternate energy).
3. Inactive operations start up (Southwest gold mines, marginal production of oil).
4. Consumers avoid the products (beef, bacon, silver).

Consequently, the demand suddenly disappears (the same conclusion arrived at by economists).

Announcements of additional production, more acreage, new products, boycotts, and a cancellation of orders all coming at once cause highly inflated prices to reverse sharply.

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These factors form a Vtop that is impossible to anticipate with reasonable risk. There is a natural reluctance to take profits while they are still growing. Further impetus is given to the reversal because of the scramble to liquidate after the first reversal day. This is followed by those latecomers or pyramiders who entered their most recent positions near the top and cannot afford a continued adverse move. The rush to close out long positions, put on new shorts, and liquidate deficit accounts only prolongs the sharpness of the Vtop, causing a liquidity void at many points during the decline.

Quantifying Spikes

A spike is often the focal point of a trade. Most often it represents a severe reaction to an event, but it may be an island reversal representing a new direction. A spike is important because it always indicates high volatility and exceptional risk and cannot be ignored. A spike has only one dominant feature, a price high or low much higher or lower than recent prices. This must result in volatility that is equally extreme. The easiest way to identify an upside spike is to compare the day's trading range with previous ranges and to the next day. This can be done by using the average

true range and satisfying both the following conditions:

High today @highest(high,n) > K x average true range(n)

High today high tomorrow > K x average true range (n)

Today's spike high must be higher than the highs of the previous ndays by a multiple, K, of the average true range; it must also be higher than tomorrow's high if it is to stand out as a spike.

GAPS

A gap is a formation caused by a jump in price from one point to the next and can be calculated as

Gap = @AbsValue(open close[1])

Gaps are phenomena that make sense only when trading is restricted to local business hours. A currency trader with 24hour capability has, theoretically, a very small chance of confronting a gap. Most gaps are overnight moves, where continuous events cause changes in price levels; when the exchange or banks open for business the price immediately jumps to the new level. A market with very large relative gaps is the Japanese yen trading in Chicago. During the Japanese business day, when most relevant news occurs, the International Monetary Market (IMM) is closed; when the IMM is open, most businesses in Japan are closed. The Chicago market is therefore always trying to catch up to the price of the dollar/yen as seen by the Japanese.

There is also a technical situation associated with price gaps. Traders place more orders to buy at a point near or just above a resistance level; similarly, they place sell orders just below support lines. This causes fast moves and a void of orders when resistance and support are penetrated. Gaps also occur after a price shock or any unexpected new release or economic report.

A gap appears as an open area on a chart created by prices trading entirely above or below the prior trading range. Gaps will usually occur at the opening of the day, a news release, or where prices break out of a clearly identified formation, such as a longterm trendline, a consolidation area, or during a prolonged major price move. Regardless of the reason, it is the consequence of a lack of speculators willing to take the opposing position causing a thinly traded or illiquid market. In the most interesting situations, the breakaway gap is the name given to the result of many stoploss orders placed at new highs or

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lows, at major trendlines as protection against unfavorable breakouts with respect to existing positions, or as an entry to a new position. The breakaway gap usually signifies a change from the previous, well-established pattern.

The common gap is the least glamorous. It occurs within a well-defined trading range or pattern, and is not indicative of a change of direction nor does it have other special attributes; hence it is called "common." Both runaway gaps and midway gaps refer to those price jumps occurring within a strong trend. They are associated with periods of illiquidity within a move; this could be the result of additional news to encourage the bulls or bears, or it could be a critical chart formation or

anticipated reversal point that fails. Runaway gaps indicate stronger moves.

The exhaustion gap or island reversal is the culmination of a major move; unfortunately, it is a formation only identifiable after the fact. If the price move has been exceptionally extended, it is likely that the first gap reversal will be the beginning of the trend change; however, there is a great risk associated with it.

Gaps are a hindrance rather than an asset to trading. A breakaway gap usually causes stoploss orders to be executed far away from the stated price. If a long position is entered in anticipation of a breakout, that breakout never occurs and a high price is guaranteed. If the breakaway gap occurs on light volume, a position might be entered on a pullback. In the final analysis, if the breakout represents a major change, a trade should be entered immediately at the market price. The poor executions will be offset by a single time when prices move quickly and no pullback occurs. A breakaway gap on high volume should be more indicative of such a major change.

Many traders believe that prices will retrace and fill the gap" that occurred sometime earlier. There are analysts who never give up, but waiting to fill a gap that is more than two years old may be carrying this technique too far. There is no doubt that the gap represents an important point at which prices move out of their previous pattern and begin a new phase. The breakaway gap will often be a position just above the previous normal price level. Once the shortterm demand situation has passed, prices should return to near normal (perhaps slightly above the old prices), but also slightly below the gap.

KEY REVERSAL DAYS

A formation that has been endowed with great forecasting power is the key reversal day, sometimes called an outside reversal day. It is a weaker form of an island reversal. A bearish key reversal is formed in one day by first making a new high in an upward trend, reversing to make a low that is lower than the previous low, and then closing below the previous close. It is considered more reliable when the prior trend is well established. This could be identified using EasyLanguage as

```
KeyReversalDown = 0;
```

```
@if close[l] > @average(close[l],n) and high >= @highest(high[l],n) and  
low < low[l] and close < close[l] then KeyReversalDown = 1;
```

where the first term tests for an uptrend over ndays, the second tests that this day is the highest price of the same ndays, the third verifies a lower low, and the last tests a lower close.

Studies have shown mixed results using the key reversal as a sole trading indicator. The most complete analysis,' similar to others, concluded that the performance was 'Strikingly unimpressive.' Even though tests have not proved its importance, traders still pay close attention to key reversals. Based on this, it must be concluded that other factors unconsciously enter into the normal perception of a key reversal. A trader's senses should not be

'O Eric Evans, "Why You Can't Rely on 'Key Reversal Days'," *Futures* (March 1985).

underestimated; the extent and speed of the prior trend, a change in

liquidity, a quieter tone, or some external news may be essential in confirming the important reversals.

Pivot Point Reversals and Swings

A pivot point is a trading day, or a price bar, that is higher or lower than the bars that come before and after. It is the common form of an island reversal and a popular way of identifying turning points. The most frequent pivot point high is a bar that has a higher high than one day before and one day after. More significant swing highs can be found by comparing the high of any day with two or more days before and after. This is the method used in TradeStation's "Swing High Bar" function. The pattern of the days on either side of the high bar are not important as long as the middle bar has the highest high.

Pivot points are used as the basis for finding swing highs and lows, and they identify the extremes of both price and oscillator for TradeStation's divergence functions. For example, if the last two price pivot points correspond to the same days as the last two stochastic or RSI pivot points, and prices are rising while the momentum is falling, there is a bearish divergence. When more days are used to identify pivot points, these divergence signals are expected to be more significant; unfortunately, they take longer to identify.

Cups and Caps

Another name given to the pivot point reversals are cups and caps, each determined by only three price bars. These two formations are associated with trading rules that are identical to pivot point channels applied to the shortest time frame. Contrary to their names, a cup formation identifies a sell signal when the trend is up, while a cap is a setup for a buy signal in a downtrend. Once an uptrend is clear, a cup formation is found using either the daily closes or daily lows. For any 3 consecutive days, the middle day must have the lowest close or the lowest low. In a cap pattern the middle day must have the highest high or the highest close of the 3day cluster. In both cases, the positioning of the highs and lows of the other 2 days are not important as long as the middle day is lower for the cup and higher for the cap.

The cup will generate a sell signal if..

1. The cup formation is the highest point of the uptrend.
2. The sell signal occurs within 3 days of the cup formation.
3. The current price closes below the lowest low (middle bar) of the cup formation.

The signal is false if prices reverse and close above the high of the cup formation, resuming the previous trend. This pattern is only expected to forecast a downward price move of two days; however, every change of direction must start somewhere, and this formation could offer an edge. A cap formation is traded with the opposite rules.

According to tests by Colby and Meyers," entries that occur based on a breakout of the highs or lows of the pivot points, called pivot point channels, are much more reliable than simply entering in the direction of the reversal based on the close of the last bar of the pivot point, cup, or cap formation. For traders not interested in this very shortterm strategy, a pivot

point may help entry timing for any longerterm method.

EPISODIC PATTERNS

There is little argument that prices change quickly in response to unexpected news. The transition from one major level to another is termed an episodic pattern; when these tran

" Tests of pivot point reversals and pivot point channels can be found in Robert W Colby and Thomas A. Meyers, *The Encyclopedia of Technical Market Indicators* (Dow JonesIrwin, 1988).

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sitions are violent, they are called shocks. The coffee and oil markets have received the greatest number of shocks; however, all markets are continually adjusting to new price lcyels, and all experience occasional shocks.

The pattern that results from episodic movement is exactly what one might expect. Following the sharp price movement there is a period when volatility declines from its highs, narrowing until a normal volatility level is found and remains at that level (Figure 94).

Patterns that result from rising prices are not the same as falling prices. Although higher price moves usually overshoot the price level at which they normally settle, sharp declines do not reach their final levels during the first shock.

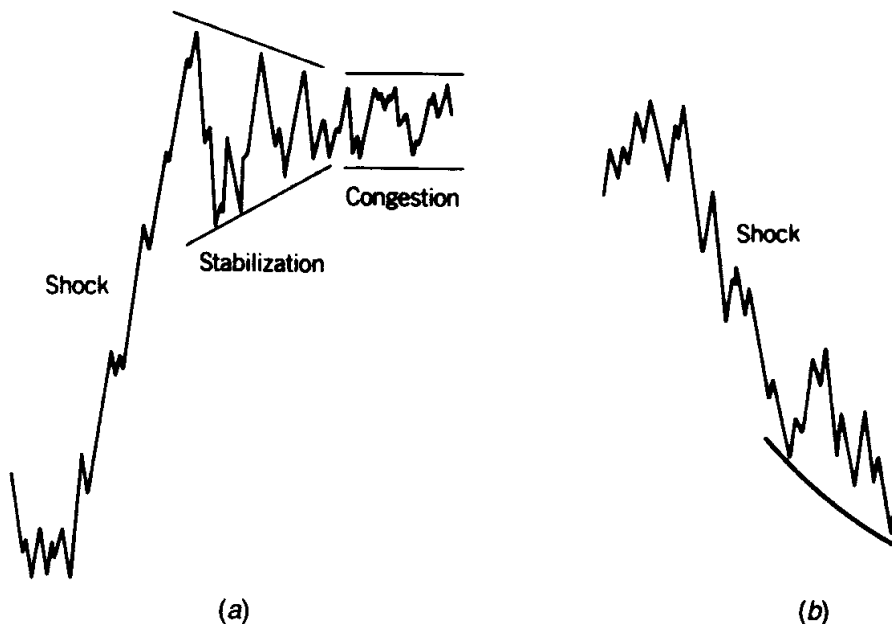
Price shocks have become the focus of much analytic work. Because a price shock is an unpredictable event, it cannot be forecast. This has a critical effect on the way in which systems are developed, especially with regard to the testing procedures. This topic is covered in other parts of this book under the topics "Price Shocks," "Robustness," and "Optimization."

PRICE OBJECTIVES FOR BAR CHARTING

There is some satisfaction in having a price objective for a trade that has just been entered. if this objective can be determined to a reliable degree, those trades would be selected that have the best profit potential as compared with the risk. It is also comforting to know that profits will be banked at a specific point. The most successful objectives will be based on straightforward concepts and not complex calculations.

The simplest and most logical price objective is a major support or resistance level established by previous trading. When entering a long position, look at the most welldefined resistance levels above the entry point. These have been discussed in a previous section of this chapter, "Tops and Bottoms." When those prior levels are tested, there is generally a technical adjustment or a reversal. In the case of a strong upward market, volatility often causes a short penetration before the setback occurs. Placing the price objective a reasonable distance below the identifiable major resistance level will always be safe; the intermediate resistance levels can be used for adding positions on technical reversals. The downside objective can be identified in a similar manner: Find the major support level and place a stop just above it.

FIGURE 94 Episodic patterns. (a) Upward price shocks. (b) Downward price shocks.



When using both support and resistance price objectives, watch carefully for a violation of the current trend don't be rigid about the position. Take advantage of each reaction to add to the position, but get out if the major trendline is broken before the objective is reached. On the other hand, if the goal is reached and prices react as predicted but then reverse and break through the previous highs or lows, the trade may be reentered on the breakout and a new price objective calculated.

There are other, more analytic ways to determine the objective of a trade. Bear in mind that these methods are considered guidelines and are not precise. if you have set a single price target for a long position, and it falls slightly above a resistance level, then the resistance level (the closer point) should be substituted for an original price objective.

The headandshoulders top has a downside objective that is associated with its volatility. This objective is measured from the point where the right shoulder penetrates the neckline and is equal to the distance from the top of the head to the neckline (Figure 95). For a major top, this goal seems modest, but it will be a good measure of the initial reaction and will generally be safe, even if a new high price is reached later.

For a consolidation area, both top and bottom, a counting method based on the width of the rectangle or consolidation pattern is used to find the price target. For a basing formation, the objective is the vertical distance above the support line equal to the width of the consolidation area (Figure 96). For downside objectives, measure vertically downward from the resistance line forming the upper bound of the congestion area, a goal similar to the headandshoulders top. This technique implies that the longer

the consolidation area, the bigger the subsequent breakout. The same method can be seen later in pointandfigure charting.

Trendlines can also be used to measure the expected price move. The most common techniques are based on channel volatility and, therefore, set very modest, realistic targets.

1. The channel width, which bounds a trend, will be equal to the price objective measured from the point of the channel breakout (Figure 97).

FIGURE 95 Headandshoulders top price objective.

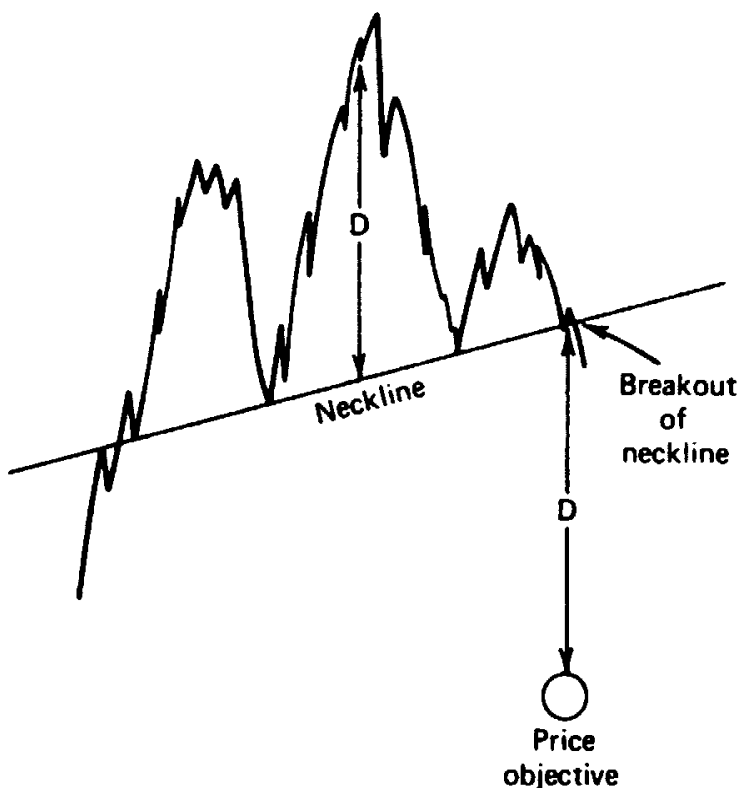
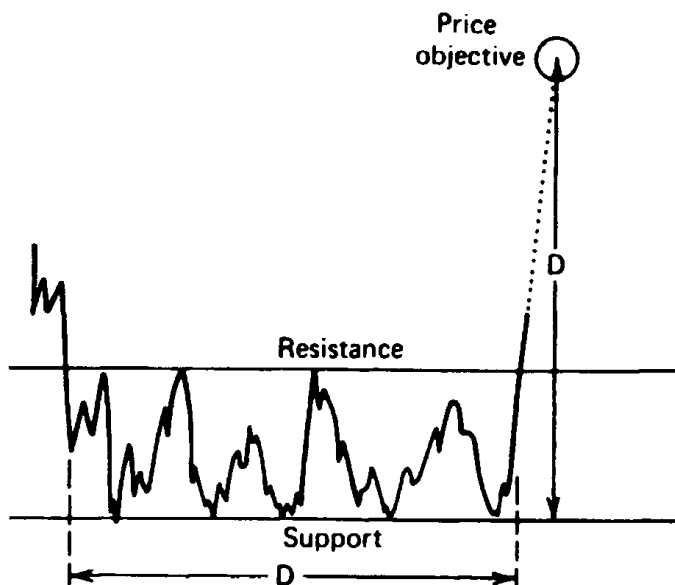


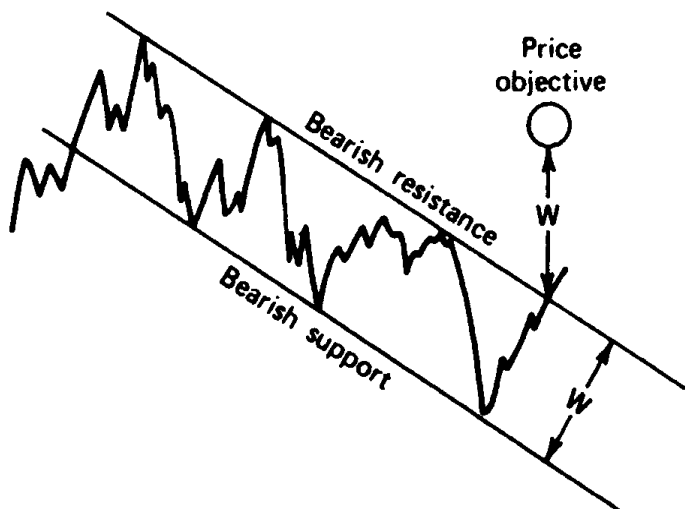
FIGURE 96 Consolidation price objective.



2. Once a breakout of an upward channel has occurred, construct a new descending channel. This is done by connecting the high of the uptrend with the high of the first reversal following the break, then drawing a parallel support line across the low of the first breakout. The new channel will be shallow but will serve as a guideline for the price change. A second channel, drawn after the next reversal, should indicate the final direction of the new move.

In Figure 98, the original channel around the uptrend was broken at the point marked by the black dot, followed by prices moving down to point a and reacting back up to point b. When a new high is not made at point b, a resistance line (1R) can be drawn from the prior high b to the top of the latest move b. A line parallel to 1R can be constructed at point a, forming the initial downward channel. Price objective 1 is on the support line of the new channel (1S) and is used once the top at point b is determined. Price objective 1 cannot be

FIGURE 97 The channel width as a price objective.



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expected to be too precise due to the early development of the channel. if prices continue to point c and then rally to d, a more reasonable channel can now be defined using trendlines 2R and 2S. The support line will again become the point where the new price objective is placed. The upper and lower trendlines can be further refined as the new high and low reactions occur. The primary trendline is always drawn first, then the new price objective becomes a point on the parallel trendline.

Triangles and flags have objectives based on volatility in a manner consistent with other patterns. The triangle objective is equivalent in size to the initial reaction, which formed the largest end of the triangle (Figure 99a). The flag is assumed to occur midway in a price move; therefore, the objective of a new breakout must be equal to the size of the move preceding the flag (Figure 99b). Recalling the comments on the problems associated with the decreasing volatility of the triangular formation, the use of the first reaction as a measure of volatility is a safe way to avoid those problems.

The Rule of Seven

Another measurement of price objectives, the Rule of Seven, is credited to Arthur Sklarew, it is based on the volatility of the prior consolidation formation and computes three successive price objectives in proportion to one another. The Rule of Seven is not symmetric for both uptrends and downtrends. Sklarew believes that, after the initial leg of a move, the downtrend reactions are closer together than the reactions in a bull market. Because the downside of a major bear market is limited, it is usually characterized by consolidation. Major bull markets tend to expand as they develop.

To calculate the objectives using the Rule of Seven, first measure the length L of the initial leg of a price move (from the previous high or low, the most extreme point before the first pullback). The objectives are:

1. In an uptrend..

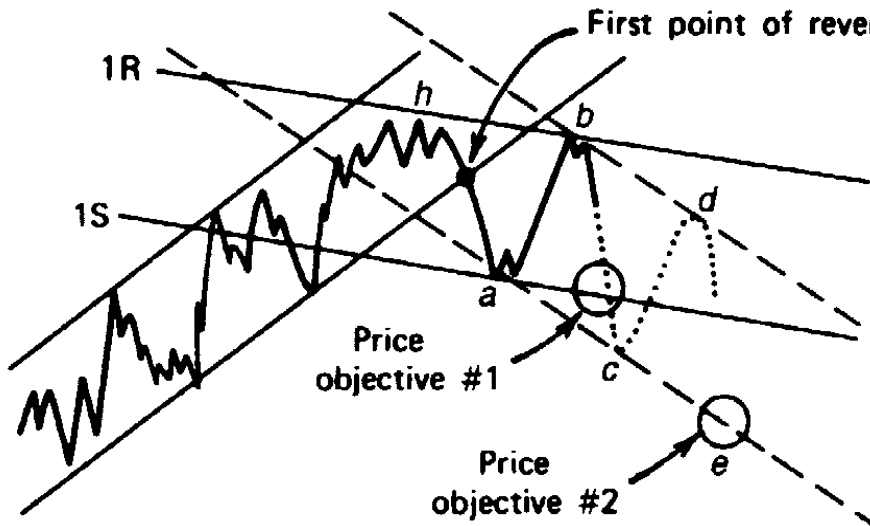
OBJ 1 = prior low + (L x 7/4)

$$\text{OBJ 2} = \text{prior low} + (\text{L} \times 7/3)$$

OBJ 3 = prior low + (L X 7/2)

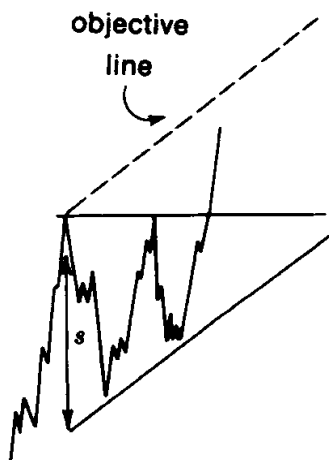
Sklarew. (See reference 8.)

FIGURE 98 Forming new channels to determine objectives.



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FIGURE99 Triangle and flag objectives. (a) Triangle objective is based on the width of the initial side, s . (b) Flag objective is equal to the move prior to the flag formation.



(a)



(b)

2. In a downtrend..

OBJ 1 = prior high ($L \times 7/5$)

OBJ 2 = prior high ($L \times 7/4$)

OBJ 3 = prior high ($L \times 7/3$)

The three objectives apply most clearly to major moves. During minor price swings it is likely that the first two objectives will be bypassed. In Sklarew's experience, regardless of whether any one objective is missed, the others still remain intact.

CANDLESTICK CHARTS

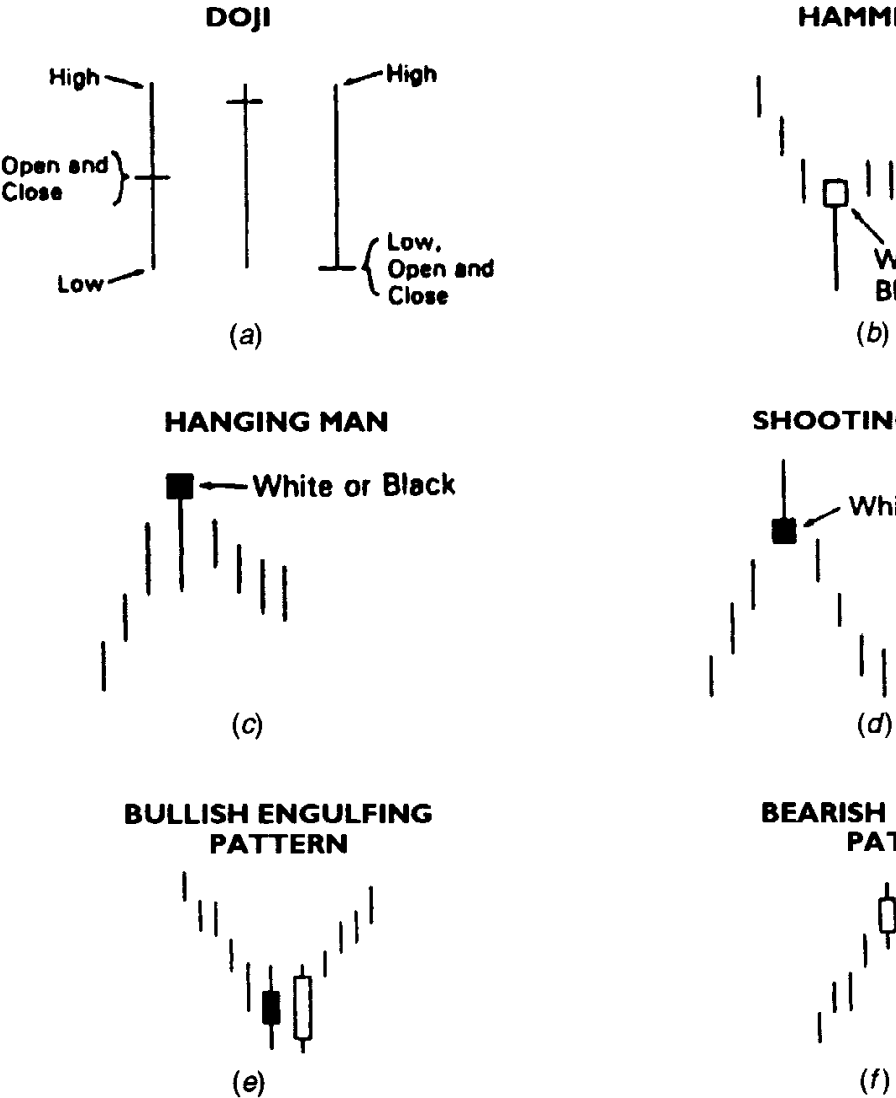
For a technique that is reported to have been used as early as the mid1600s, Japanese candle charts were slow finding their way into the western method of analysis. In actuality, candle charts only differ from simple bar charts by shading the piece of the bar between the opening and closing prices white if the close is higher than the open and black if the close is lower than the open. The shaded area is called the body, and the extended lines are the shadows. With this simple change, we get an entirely new way of looking at and interpreting charts. The patterns become much clearer than the western style of line chart. Over the centuries many of the candle formations have been given names representing their significance (see Figure 910):

Dojiin which the opening and closing prices are the same.

Hammera bullish reversal signal, showing the bottom of a swing, where the body is at the top of the candle, indicating an upward change of direction, and the shadow is below the body. The body may be black or white.

Hanging mananother bearish reversal pattern where the body of the candle represents the high of a swing, and the shadow lies below in the direction of the reversal. The body may be black or white.

FIGURE910 Popular candle formations.



Source.. jack D. Schwager, Schwager on Futures: Technical Analysis (John Wiley& Sons, 1996, pp. 281288).

Shooting stara bearish signal, also occurs at the top of a swing and has its body at the bottom of the candle with the shadow

above. The body may be black or white.

Engulfing pattern occurring at a swing high or low, has the current body engulfing the entire prior candle.

Although these patterns are similar to western bar chart formation, none of them are exactly the same. The hammer, hanging man, and shooting star are reversal patterns but can only be compared with the simple pivot point, where the middle day is higher or lower than the bars on either side. None of these candle formations would be a key reversal or island reversal. The engulfing pattern is stronger than the typical outside day, because the spanning of the prior day's range must be done only by the current day's open-close range.

The analysis of candle charts is a skill involving the understanding of many complex and interrelated patterns. For a brief review of this method, readers are referred to Schwager on Futures. Technical Analysis; for full coverage, Japanese Candlestick Charting Techniques (New York Institute of Finance, 1991), and Beyond Candlesticks New Japanese Trading Techniques, both by Steve Nison, are recommended.

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Quantifying Candle Formations

The preciseness of the candle formations allows some patterns to be tested. One technique uses the shadows as confirmation of direction. We can interpret an increase in the size of the upper shadows as strengthening resistance (prices are closing lower each day). and an increase in the size of the lower shadows represents more support. One way to look at this is by defining

Upper shadow (white) high close Lower shadow (white) open low

Upper shadow (black) high open Lower shadow (black) close low

The sequences of upper and lower shadows can be smoothed separately using a moving average to find out whether they are rising or failing."

Another method for determining whether black or white candles dominate recent price movement is to use only the body of the candle, $B = \text{close} - \text{open}$ and apply a momentum calculation

$$\text{Body momentum} = \frac{B_{\text{up}}}{B_{\text{up}} + B_{\text{down}}} \times 100$$

where B_{up} is the sum of the days where $B > 0$ (b

B_{down} is the sum of the days where $B < 0$ (b

the number of days is recommended as 1

When the body momentum is greater than 70 the whites dominate; when

the value is below 20 the blacks dominate.

USING THE BAR CHART

Charting is not precise and the construction of the trendlines, other geometric formations, and their interpretation can be performed with some latitude. When using the simplest trendline analysis, it often happens that there will be a small penetration of the channel or trendline followed by a movement back into the channel. Some think that this inaccuracy, with respect to the rules, makes charting useless; however, many experienced analysts interpret this action as confirmation of the trend. The trendline is not redrawn so that the penetration becomes the new low of the trend, but it is left in its original position.

We must always step back and look for the underlying purpose in each method of analysis, whether technical or fundamental. In the case of the trendline we are trying to identify the direction of prices over some time period. Chartists can use a simple straight line to visualize the direction; they draw the uptrend by connecting the lowest prices in a rising market even though each point used may represent varying levels of volatility and unique conditions. The chances of these points aligning perfectly, or forecasting the perfect price support level, is small. A trendline is simply a guide; it may be too conservative at one time and too aggressive another; you'll never know. Applied rigorously, charting rules should produce many incorrect signals but be right in the most important cases. The challenge of the chartist is to interpret the pattern of prices in context with the bigger picture.

Multiple Signals

Some of the impreciseness of charting can be offset with confirming signals. A simultaneous short and longterm trend break is a much stronger signal than either one considered separately. The break of a headandshoulders neckline that corresponds to a channel sup

" Both shadow trends and body momentum are adapted from Tushar Chande and Stanley Kroll. *The New Technical Trader* (John Wiley & Sons, 1994).

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port line is likely to receive much attention. Whenever there are multiple signals converging at, or near, a single point, whether based on moving averages, Gann, cycles, or phases of the moon, that point gains significance. In chart analysis, the occurrence of multiple signals at one point can compensate for the quality of the interpretation.

Pattern Failures

The failure to adhere to a pattern is equally as important as the continuation of that pattern. Although a trader might anticipate a reversal as prices near a major support line, a break of that trendline is significant in continuing the downward move. A failure to stop at the support line should result in setting short positions and abandoning plans for higher prices.

A headandshoulders formation that breaks the neckline, declines for a day or two, then reverses and moves above the neckline is another pattern failure. Postpattern activity must confirm the pattern. Failure to do so means that the market refused to follow through and, therefore, should be traded in the opposite direction. This is not a case of identifying the wrong pattern; instead, price action actively opposed the completion of the pattern. Wyckoff calls this "Effort and Results," referring to the effort expended by the market to produce a pattern that explains the price direction. If this pattern is not followed by results that confirm the effort, the opposite position should be set.

Consider a trading day in which prices open above the previous close, move higher, then close lower. The expectation is for prices to open

lower the next day. If an inside day or a higher open follows, there is a strong sign of higher prices to come. As Thompson concludes, 'A strongly suggestive pattern that is aborted is just as valuable as a completed pattern.'"

Change of Character

Thompson also discusses the completion of a pattern or price trend by identifying a change of character in the movement. As a trend develops, the reactions, or pullbacks, tend to become smaller. Traders looking to enter the trend wait for reactions to place their orders; as the move becomes more obvious, these reactions will get smaller and the increments of trend movement will become larger. When the reaction suddenly is larger, the move is ending; the change in the character of the move signals a prudent exit, even if prices continue erratically in the direction of the trend.

A similar example occurs in the way prices react to economic reports or government action. The first time the Federal Reserve acts to raise rates after a prolonged decline the market is not prepared and bond prices react sharply lower. Before the next meeting of the Fed the market may be more apprehensive, but is likely to be neutral with regard to expectation of policy. However, once there is a pattern of increasing rates following signs of inflation, the market begins to anticipate the action of the Fed. The sharp move occurs when the government fails to take action.

Testing Your Skill

Recognizing a pattern is both an art and a science. Not everyone has an eye for patterns; others will see formations where no one else would. The first decision may be the most important: How much of the chart do you use? It is perfectly normal for different time intervals to show different trends. In some cases, arbitrarily cutting the chart at some previous date might cause a clear trend to disappear. The price scale (the vertical axis) of the chart is another variable not considered by some chartists. When applying methods requir

"Jesse H. Thompson, "What Textbooks Never Tell You," *Technical Analysis of Stocks & Commodities* (November/December 1983).

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ing specific angles, the chart paper is expected to have square boxes. Regardless of the shape of the box, the formations will appear very different from one piece of chart paper, or computerized page, to another.

The timeliness of the pattern identification is the most serious problem. Can the formation be interpreted in time to act on a breakout, or is the pattern only seen afterward? At different stages of development, the lines may appear to form different patterns. Before using your charting skills to trade, practice simulating the daytoday development of prices as follows:

1. Hold a piece of the paper over the right side of the chart, covering the most recent months, or better still, have someone else give you the partial chart.
2. Look at the chart and analyze the formations.
3. Determine what action will be based on your interpretation. Be specific.
4. Move the paper 1 day to the right, or have someone else give you the next day's price.

5. Record any orders that would have been filled based on the prior day's analysis. Don't cheat.
6. Determine whether the new day's price would have altered your formations and plans.
7. Return to step 3 until finished.

This simple exercise might save a lot of money but may be discouraging. With practice you will become better at finding and using formations and will learn to select the ones that work best. Very few traders base their trading decisions entirely on bar charts. Many refer to charts for confirmation of separate technical or fundamental analysis; others will only use the most obvious major trendlines, looking for points at which multiple indicators converge. The general acceptance of bar charting analysis and the need for visualization makes it a lasting tool.